

**To:** McGartland, Al[McGartland.Al@epa.gov]  
**Cc:** Marten, Alex[Marten.Alex@epa.gov]; Jenkins, Robin[Jenkins.Robin@epa.gov]; Ferris, Ann[Ferris.Ann@epa.gov]; Maguire, Kelly[Maguire.Kelly@epa.gov]  
**From:** Evans, DavidA  
**Sent:** Tue 6/30/2015 7:43:12 PM  
**Subject:** Notes on 111(d) RIA  
[2015 06 30 notes on RIA final.docx](#)

Hi Al,

Here are the notes that Alex and I pulled together for our conversation with Joel at 4.

I will be bringing copies to the meeting.

Thanks,

Dave

**To:** Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Marsh, Karen[Marsh.Karen@epa.gov]; Vetter, Rick[Vetter.Rick@epa.gov]; Thundiyil, Karen[Thundiyil.Karen@epa.gov]  
**Cc:** Cozzie, David[Cozzie.David@epa.gov]; Fulcher, Charles[Fulcher.Charles@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Moore, Chris[Moore.Chris@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]  
**From:** Ward, Hillary  
**Sent:** Tue 6/2/2015 3:49:46 PM  
**Subject:** RE: Landfills supplemental NSPS - SC-CH4 insert

We will review. However, please keep in mind that changes made must also be consistent with requirements for OAQPS rule/packages.

Regards

Hillary Ward

US EPA, Sector Policies and Programs Division

Fuels and Incineration Group

(919)541-3154

**From:** Kopits, Elizabeth  
**Sent:** Tuesday, June 02, 2015 11:32 AM  
**To:** Marsh, Karen; Vetter, Rick; Thundiyil, Karen  
**Cc:** Ward, Hillary; Cozzie, David; Fulcher, Charles; Shouse, Kate; Moore, Chris; Marten, Alex  
**Subject:** RE: Landfills supplemental NSPS - SC-CH4 insert

Hi Karen et al.

My apologies yet again, but as I am reviewing the RIA (still the advance copy I believe), I noticed a few things that would be good to update in the NSPS FRN to improve consistency across documents. Attached is the supplemental FRN plus the benefits insert from yesterday with a few more edits on each.

I hope this helps. Please let me know if you would like to discuss.

Thanks!

Elizabeth

**From:** Marsh, Karen  
**Sent:** Monday, June 01, 2015 4:25 PM  
**To:** Kopits, Elizabeth; Vetter, Rick; Thundiyil, Karen  
**Cc:** Ward, Hillary; Cozzie, David; Fulcher, Charles; Shouse, Kate; Moore, Chris; Marten, Alex  
**Subject:** RE: Landfills supplemental NSPS - SC-CH4 insert

Thanks Elizabeth. I'll get these changes incorporated.

\*\*\*\*\*

Karen R. Marsh, PE

US EPA, OAQPS, Sectors Policies and Programs Division

Fuels and Incineration Group

109 TW Alexander Drive, Mail Code E143-05

Research Triangle Park, NC 27711

Direct: (919) 541-1065; email: [marsh.karen@epa.gov](mailto:marsh.karen@epa.gov)

**From:** Kopits, Elizabeth  
**Sent:** Monday, June 01, 2015 3:36 PM  
**To:** Marsh, Karen; Vetter, Rick; Thundiyil, Karen  
**Cc:** Ward, Hillary; Cozzie, David; Fulcher, Charles; Shouse, Kate; Moore, Chris; Marten, Alex  
**Subject:** RE: Landfills supplemental NSPS - SC-CH4 insert

Hi Karen et al.,

Sorry for the multiple emails, but here is an update to the file I just sent you. It includes two more minor edits from Alex M.

Thanks!

Elizabeth

**From:** Kopits, Elizabeth  
**Sent:** Monday, June 01, 2015 3:06 PM  
**To:** Marsh, Karen; Vetter, Rick; Thundiyil, Karen  
**Cc:** Ward, Hillary; Cozzie, David; Fulcher, Charles; Shouse, Kate; Moore, Chris; Marten, Alex  
**Subject:** RE: Landfills supplemental NSPS - SC-CH4 insert

Hi Karen et al.,

I think this is a good length for the supplemental. Attached are some suggested edits that hopefully do not make it too much longer!

Please feel free to call me to discuss, or Kate and I can just iterate directly if that is easier (we are working together on the SCC/SCM section for a number of other rules anyway).

Thanks,

Elizabeth

Elizabeth Kopits, Ph.D.

National Center for Environmental Economics

Office of Policy, US EPA

1200 Pennsylvania Ave, NW, MC 1809T

Washington, DC 20460

(202) 566-2299

**From:** Marsh, Karen

**Sent:** Monday, June 01, 2015 1:31 PM

**To:** Vetter, Rick; Thundiyil, Karen; Kopits, Elizabeth

**Cc:** Ward, Hillary; Cozzie, David; Fulcher, Charles; Shouse, Kate

**Subject:** Landfills supplemental NSPS - SC-CH4 insert

Rick, Karen, and Elizabeth,

Attached for your review is language we intend to insert in the MSW Landfills NSPS Supplemental proposal related to the social-cost of methane. This text will go immediately following Table 1. Kate Shouse prepared the text and Charlie and I worked together to make a few minor edits, including only presenting the proposed option in Table 2 for consistency with what we have in the current version of the Emission Guidelines proposal.

Please review this text and let me know if you have any additional changes or edits and if this will suffice for discussion in the NSPS supplemental with further discussion available in the RIA.

Thanks,

Karen

\*\*\*\*\*

Karen R. Marsh, PE

US EPA, OAQPS, Sectors Policies and Programs Division

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Research Triangle Park, NC 27711

Direct: (919) 541-1065; email: [marsh.karen@epa.gov](mailto:marsh.karen@epa.gov)

**To:** Marten, Alex[Marten.Alex@epa.gov]  
**From:** Evans, DavidA  
**Sent:** Thur 5/28/2015 3:28:47 PM  
**Subject:** My draft with comments.  
EO 12866 CPP 2060 AR33 Final\_20150522\_dae.docx

I still need to chat with Kelly to see if communities/EJ edits are worth keeping.

d

**To:** Marten, Alex[Marten.Alex@epa.gov]  
**From:** Evans, DavidA  
**Sent:** Thur 5/28/2015 3:28:47 PM  
**Subject:** My draft with comments.  
EO 12866 CPP 2060 AR33 Final\_20150522\_dae.docx

I still need to chat with Kelly to see if communities/EJ edits are worth keeping.

d



**To:** CurryBrown, Amanda[CurryBrown.amanda@epa.gov]; Deck, Leland[Deck.Leland@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Risley, David[Risley.David@epa.gov]; Hutson, Nick[Hutson.Nick@epa.gov]; Evans, DavidA[Evans.DavidA@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]; Fellner, Christian[Fellner.Christian@epa.gov]; Johnson, Mary[Johnson.Mary@epa.gov]; Culligan, Kevin[Culligan.Kevin@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]; Langdon, Robin[Langdon.Robin@epa.gov]; Weatherhead, Darryl[Weatherhead.Darryl@epa.gov]; Hubbell, Bryan[Hubbell.Bryan@epa.gov]; Keaveny, Brian[Keaveny.Brian@epa.gov]; Stenhouse, Jeb[Stenhouse.Jeb@epa.gov]; Silverman, Steven[silverman.steven@epa.gov]  
**From:** Chappell, Linda  
**Sent:** Wed 5/20/2015 3:12:58 PM  
**Subject:** 111b RIA  
EO 12866 111(b) New-Mods 2060-AQ91 RIA Final 20150520.docx

Hello Everyone

The 111b RIA is finally moving to OMB this morning. I have uploaded the clean version of the RIA to Sharepoint. It is available for edits. The file name for the new document is : EO 12866 111(b) New-Mods 2060-AQ91 RIA Final 20150520

Please let me know if you have any questions.

Thanks,

Linda

Linda M. Chappell Ph.D.

US EPA, OAQPS, Sectors Policies and Programs Division

109 TW Alexander Drive, Mail Code E143-05

Research Triangle Park, NC 27711

telephone 919-541-2864; fax 919-541-3470; email- chappell.linda@epa.gov

**To:** Epner, Stephanie[EpnerS@state.gov]; Nakagawa, Melanie Y[NakagawaMY@state.gov]; Allen, Ashley[AllenA4@state.gov]; Johnson, Alisha[JohnsonA4@state.gov]; Light, Andrew E (S/SECC)[LightAE@state.gov]; Caruso, Randy J[CarusoRJ@state.gov]; Nogueira, Ricardo P.[NogueiraRP@state.gov]; Conway, Sarah R[ConwaySR@state.gov]; Schuler, Reed M[SchulerRM@state.gov]  
**Cc:** Akhtar, Farhan H[AkhtarFH@state.gov]; Gopstein, Avi M[GopsteinAM@state.gov]; Marten, Alex[Marten.Alex@epa.gov]; Klemick, Heather[Klemick.Heather@epa.gov]; Sheriff, Glenn[SheriffG@state.gov]  
**From:** Reidmiller, David R  
**Sent:** Tue 5/19/2015 1:36:50 PM  
**Subject:** Talking point - IMF: FF industry gets \$10M/min in "subsidies"

## Ex 5

[http://www.theguardian.com/environment/2015/may/18/fossil-fuel-companies-getting-10m-a-minute-in-subsidies-says-imf?CMP=share\\_btn\\_fb](http://www.theguardian.com/environment/2015/may/18/fossil-fuel-companies-getting-10m-a-minute-in-subsidies-says-imf?CMP=share_btn_fb)

## Fossil fuels subsidised by \$10m a minute, says IMF

‘Shocking’ revelation finds \$5.3tn subsidy estimate for 2015 is greater than the total health spending of all the world’s governments

Fossil fuel companies are benefitting from global subsidies of \$5.3tn a year, equivalent to \$10m a minute every day, according to a startling new estimate by the International Monetary Fund.

The IMF calls the revelation “shocking” and says the figure is an “extremely robust” estimate of the true cost of fossil fuels. The \$5.3tn subsidy estimated for 2015 is greater than the total health spending of all the world’s governments.

The vast sum is largely due to polluters not paying the costs imposed on governments by the burning of coal, oil and gas. These include the harm caused to local populations by air pollution as well as to people across the globe affected by the floods, droughts and storms being driven by climate change.

Nicholas Stern, an eminent climate economist at the London School of Economics, said: “This very important analysis shatters the myth that fossil fuels are cheap by showing just how huge their real costs are. There is no justification for these enormous subsidies for fossil fuels, which distort markets and damages economies, particularly in poorer countries.”

Lord Stern said that even the IMF’s vast subsidy figure was a significant underestimate: “A more complete estimate of the costs due to climate change would show the implicit subsidies for fossil fuels are much bigger even than this report suggests.”

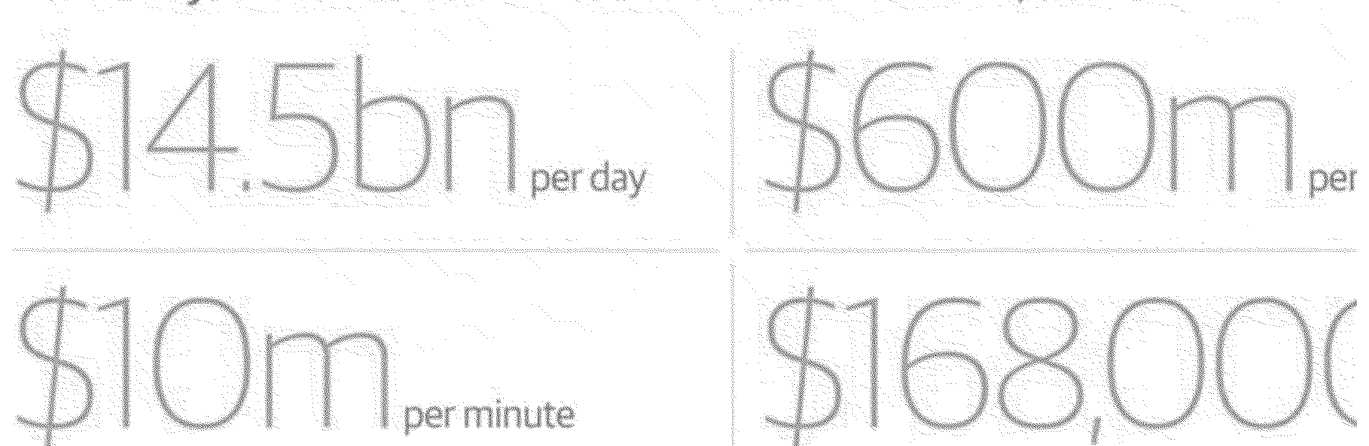
The IMF, one of the world’s most respected financial institutions, said that ending subsidies for fossil fuels would cut global carbon emissions by 20%. That would be a giant step towards taming global warming, an issue on which the world has made little progress to date.

Ending the subsidies would also slash the number of premature deaths from outdoor air pollution by 50% – about 1.6 million lives a year.

Furthermore, the IMF said the resources freed by ending fossil fuel subsidies could be an economic “game-changer” for many countries, by driving economic growth and poverty reduction through greater investment in infrastructure, health and education and also by cutting taxes that restrict growth.

## **Fossil fuel subsidies in numbers**

The IMF says the cost of fossil fuel subsidies in 2015 will be US\$5.3tn or ...



Another consequence would be that the need for subsidies for renewable energy

– a relatively tiny \$120bn a year – would also disappear, if fossil fuel prices reflected the full cost of their impacts.

“These [fossil fuel subsidy] estimates are shocking,” said Vitor Gaspar, the IMF’s head of fiscal affairs and former finance minister of Portugal. “Energy prices remain woefully below levels that reflect their true costs.”

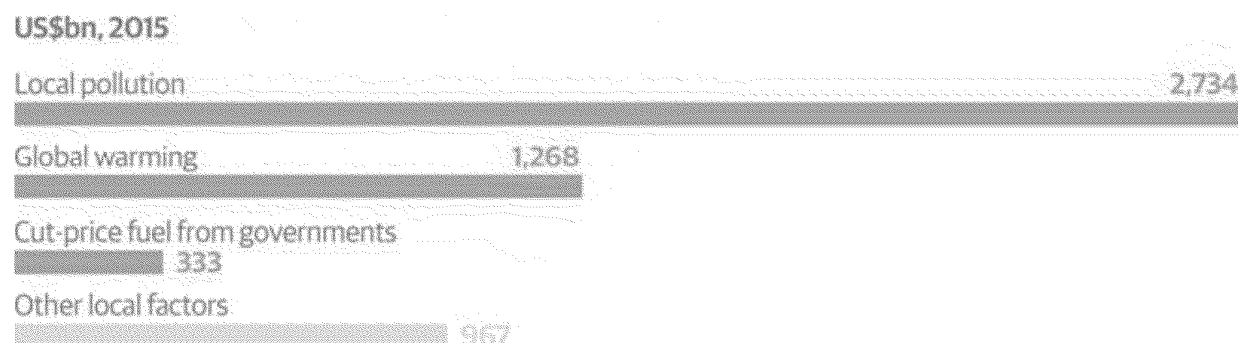
David Coady, the IMF official in charge of the report, said: “When the [\$5.3tn] number came out at first, we thought we had better double check this!” But the broad picture of huge global subsidies was “extremely robust”, he said. “It is the true cost associated with fossil fuel subsidies.”

The IMF estimate of \$5.3tn in fossil fuel subsidies represents 6.5% of global GDP. Just over half the figure is the money governments are forced to spend treating the victims of air pollution and the income lost because of ill health and premature deaths. The figure is higher than a 2013 IMF estimate because new data from the World Health Organisation shows the harm caused by air pollution to be much higher than thought.

Coal is the dirtiest fuel in terms of both local air pollution and climate-warming carbon emissions and is therefore the greatest beneficiary of the subsidies, with just over half the total. Oil, heavily used in transport, gets about a third of the subsidy and gas the rest.

The biggest single source of air pollution is coal-fired power stations and China, with its large population and heavy reliance on coal power, provides \$2.3tn of the annual subsidies. The next biggest fossil fuel subsidies are in the US (\$700bn), Russia (\$335bn), India (\$277bn) and Japan (\$157bn), with the European Union collectively allowing \$330bn in subsidies to fossil fuels.

## Fossil fuel subsidies – how the costs break down



The costs resulting from the climate change driven by fossil fuel emissions account for subsidies of \$1.27tn a year, about a quarter, of the IMF's total. The IMF calculated this cost using an official US government estimate of \$42 a tonne of CO2 (in 2015 dollars), a price "very likely to underestimate" the true cost, according to the UN's Intergovernmental Panel on Climate Change.

The direct subsidising of fuel for consumers, by government discounts on diesel and other fuels, account for just 6% of the IMF's total. Other local factors, such as reduced sales taxes on fossil fuels and the cost of traffic congestion and accidents, make up the rest. The IMF says traffic costs are included because increased fuel prices would be the most direct way to reduce them.

Christiana Figueres, the UN's climate change chief charged with delivering a deal to tackle global warming at a crunch summit in December, said: "The IMF provides five trillion reasons for acting on fossil fuel subsidies. Protecting the poor and the vulnerable is crucial to the phasing down of these subsidies, but the multiple economic, social and environmental benefits are long and legion."

## Top fossil fuel subsidies by country



Barack Obama and the G20 nations called for an end to fossil fuel subsidies in 2009, but little progress had been made until oil prices fell in 2014. In April, the president of the World Bank, Jim Yong Kim, told the Guardian that it was crazy that governments were still driving the use of coal, oil and gas by providing subsidies. "We need to get rid of fossil fuel subsidies now," he said.

Reform of the subsidies would increase energy costs but Kim and the IMF both noted that existing fossil fuel subsidies overwhelmingly go to the rich, with the

wealthiest 20% of people getting six times as much as the poorest 20% in low and middle-income countries. Gaspar said that with oil and coal prices currently low, there was a “golden opportunity” to phase out subsidies and use the increased tax revenues to reduce poverty through investment and to provide better targeted support.

Subsidy reforms are beginning in dozens of countries including Egypt, Indonesia, Mexico, Morocco and Thailand. In India, subsidies for diesel ended in October 2014. “People said it would not be possible to do that,” noted Coady. Coal use has also begun to fall in China for the first time this century.

On renewable energy, Coady said: “If we get the pricing of fossil fuels right, the argument for subsidies for renewable energy will disappear. Renewable energy would all of a sudden become a much more attractive option.”

Shelagh Whitley, a subsidies expert at the Overseas Development Institute, said: “The IMF report is yet another reminder that governments around the world are propping up a century-old energy model. Compounding the issue, our research shows that many of the energy subsidies highlighted by the IMF go toward finding new reserves of oil, gas and coal, which we know must be left in the ground if we are to avoid catastrophic, irreversible climate change.”

Developing the international cooperation needed to tackle climate change has proved challenging but a key message from the IMF’s work, according to Gaspar, is that each nation will directly benefit from tackling its own fossil fuel subsidies. “The icing on the cake is that the benefits from subsidy reform – for example, from reduced pollution – would overwhelmingly accrue to local populations,” he said.

“By acting local, and in their own best interest, [nations] can contribute significantly to the solution of a global challenge,” said Gaspar. “The path forward is clear: act local, solve global.”

**David Reidmiller, PhD**

*Chief Climate Scientist*

U.S. Department of State

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[reidmillerdr@state.gov](mailto:reidmillerdr@state.gov)

<http://www.state.gov/e/oes/climate/index.htm>

This email is UNCLASSIFIED.

**To:** Marten, Alex[Marten.Alex@epa.gov]  
**Cc:** Evans, DavidA[Evans.DavidA@epa.gov]; Roberts, Martha[Roberts.Martha@epa.gov]  
**From:** Elman, Barry  
**Sent:** Wed 5/6/2015 4:36:41 PM  
**Subject:** FW: EPA's estimated 18% incremental LCOE estimate for partial CCS

See Nick's rough cost/ton (and cost/tonne) estimates in blue, below.

**From:** Elman, Barry  
**Sent:** Monday, May 04, 2015 11:46 AM  
**To:** Evans, DavidA; Marten, Alex; Roberts, Martha  
**Subject:** Re: EPA's estimated 18% incremental LCOE estimate for partial CCS

Dave and Alex: Another question for you.

**Non-Responsive**



# **Non-Responsive**

# **Ex 5**

# Ex 5

Barry

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**From:** Evans, DavidA  
**Sent:** Friday, May 1, 2015 5:17 PM  
**To:** Elman, Barry; Marten, Alex; Roberts, Martha  
**Subject:** RE: EPA's estimated 18% incremental LCOE estimate for partial CCS

Sounds good. And as I mentioned before, I still have some roughed out notes on what

**Non-Responsive**

**From:** Elman, Barry  
**Sent:** Friday, May 01, 2015 11:22 AM  
**To:** Evans, DavidA; Marten, Alex; Roberts, Martha  
**Subject:** RE: EPA's estimated 18% incremental LCOE estimate for partial CCS

Excellent point Dave

**Non-Responsive**

**Non-Responsive**

But I will try to find out.

Thanks, both of you.

Barry

**From:** Evans, DavidA  
**Sent:** Friday, May 01, 2015 9:32 AM  
**To:** Marten, Alex; Roberts, Martha; Elman, Barry  
**Subject:** RE: EPA's estimated 18% incremental LCOE estimate for partial CCS

# Non-Responsive

**From:** Marten, Alex  
**Sent:** Friday, May 01, 2015 9:26 AM  
**To:** Evans, DavidA; Roberts, Martha; Elman, Barry  
**Subject:** RE: EPA's estimated 18% incremental LCOE estimate for partial CCS

# Non-Responsive

--

Alex L. Marten  
phone: [\(202\) 566-2301](tel:(202)566-2301)  
email: [marten.alex@epa.gov](mailto:marten.alex@epa.gov)

**From:** Evans, DavidA  
**Sent:** Friday, May 01, 2015 9:22 AM  
**To:** Roberts, Martha; Marten, Alex; Elman, Barry  
**Subject:** RE: EPA's estimated 18% incremental LCOE estimate for partial CCS

# Non-Responsive

d

**From:** Roberts, Martha  
**Sent:** Friday, May 01, 2015 7:40 AM  
**To:** Marten, Alex; Elman, Barry; Evans, DavidA  
**Subject:** RE: EPA's estimated 18% incremental LCOE estimate for partial CCS

Thanks guys, this may be very helpful.

**From:** Marten, Alex  
**Sent:** Friday, May 01, 2015 7:24 AM  
**To:** Elman, Barry; Evans, DavidA  
**Cc:** Roberts, Martha  
**Subject:** RE: EPA's estimated 18% incremental LCOE estimate for partial CCS

# Non-Responsive

--

Alex L. Marten  
phone: [\(202\) 566-2301](tel:(202)566-2301)  
email: [marten.alex@epa.gov](mailto:marten.alex@epa.gov)

**From:** Elman, Barry  
**Sent:** Friday, May 01, 2015 7:11 AM  
**To:** Evans, DavidA; Marten, Alex  
**Cc:** Roberts, Martha  
**Subject:** EPA's estimated 18% incremental LCOE estimate for partial CCS

Dave and Alex,

# **Non-Responsive**

# **Non-Responsive**

Does this analysis (and position) seem sound to you?

Thanks,

Barry

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**From:** Hutson, Nick

**Sent:** Tuesday, January 6, 2015 5:24 PM

**To:** Culligan, Kevin; Hoffman, Howard; Silverman, Steven; Fellner, Christian; Fruh, Steve; Elman, Barry; Evans, DavidA; Marten, Alex

**Subject:** some graphics for you to think about

All –

**Non-Responsive**

**Non-Responsive**

**Non-Responsive**



# Non-Responsive

# Non-Responsive

Nick Hutson, PhD

Energy Strategies Group

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